

H11077

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	Hydrographic/Side Scan Sonar/ Multibeam
Project No.	S-B904-WH
Registry No.	H11077
LOCALITY	
State	Massachusetts
General Locality	South Coast of Massachusetts
Sub-locality	Woods Hole
2001	
CHIEF OF PARTY CDR Steven R. Barnum, NOAA	
LIBRARY & ARCHIVES	
DATE	

NOAA FORM 77-28
U.S. DEPARTMENT OF COMMERCE
(11-72)
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

H11077

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: **Massachusetts**

General Locality: **South Coast of Massachusetts**

Sub-Locality: **Woods Hole**

Scale: **1:5,000** Date of Survey: **9/5/01 to 9/9/01**

Instructions Dated: **8/29/01** Project Number: **S-B904-WH**

Vessel: **NOAA Ship WHITING, S-329**

Chief of Party: **CDR Steven R. Barnum, NOAA**

Surveyed by: **WHITING Personnel**

Soundings by: **Odom Echotrac DF3200 MK II Echosounder**
Reson SeaBat 8101 multibeam sonar

Graphic record scaled by: **WHITING Personnel**

Graphic record checked by: ... **WHITING Personnel**

Protracted by: **N/A** Automated Plot: **HP-750C (field)**

Verification by: **Atlantic Hydrographic Branch *Personnel***

Soundings in: ~~Meters~~ ***Feet*** at MLLW

Remarks: ***Bold, red, italicized Notes in Descriptive Report were made during office processing.***

1) All Times are UTC.

2) This is a Basic Hydrographic Survey.

3) Projection is UTM Zone 19.

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APPENDIX I - V *

SEPARATE I - V *

** Data filed with original field records*

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SURVEY H11077

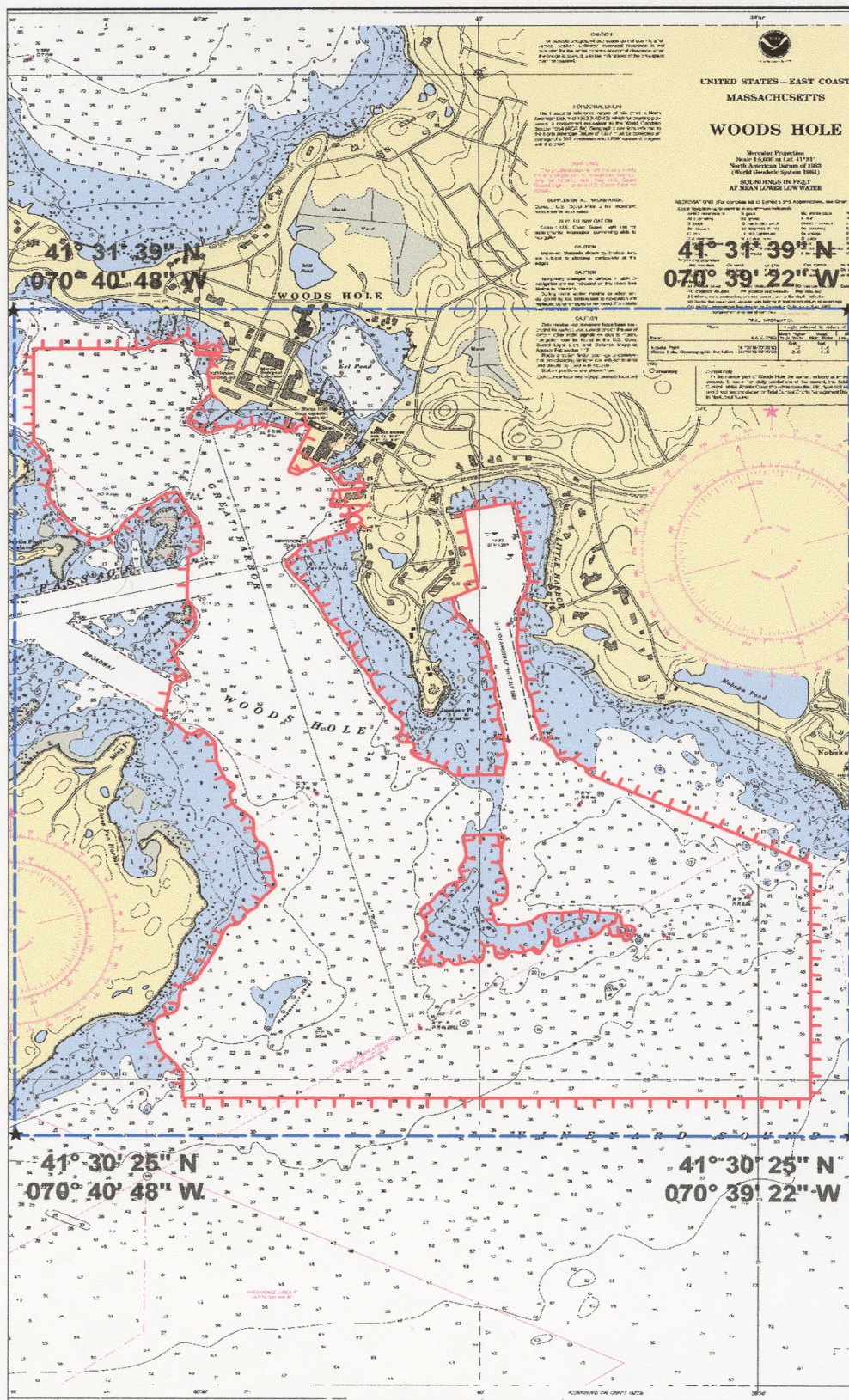
Scale of Survey: 1:5,000
Year of Survey: 2001
NOAA Ship WHITING
CDR Steven R. Barnum, Commanding

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions S-B904-WH, South Coast of Massachusetts. The instructions were dated August 29, 2001. No changes were made to the letter instructions.

This Descriptive Report pertains to survey H11077, which includes Woods Hole, Massachusetts.

For complete survey limits, see the chartlet on the following page (Fig 1).



This chartlet is up to date with the latest Local Notice to Mariners information dated August 25, 2001. NOT FOR NAVIGATION.

NOAA Ship WHITING
CDR Steven R. Barnum
Commanding
September 5 to
September 9, 2001

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: UTM 19
Central Meridian: 069° 00 00
Scale Factor: 0.9996

Project: S-B904-WH
Survey: H11077
State: Massachusetts
Locality: South Coast of Massachusetts
Sub-locality: Woods Hole
Survey Scale: 1:5,000

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE



B. DATA ACQUISITION AND PROCESSING *See also the Evaluation Report*

B.1. EQUIPMENT

Data were acquired by survey Launches 1005 and 1014. These launches are NOAA's standard 29 ft aluminum Jensen vessels with a typical 0.5-meter transducer draft. All vessels were configured as described in the Data Acquisition and Processing Report (DAPR) * for this project. A brief description of these configurations are listed below.

Launch 1014 acquired SSS and VBES data. Side scan data were acquired with a hull-mounted Klein T-5000 side scan sonar towfish and VBES data were acquired with an Odom Echosonac DF3200 MKII echosounder.

Survey Launch 1005 acquired Shallow Water Multibeam (SWMB) data. VBES¹ data were acquired with an Odom Echosonac DF3200 MKII echosounder.

No unusual vessel configurations were employed on this project. Refer to the project DAPR* for exact vessel configuration information.

B.2. QUALITY CONTROL

Side Scan Sonar Quality Control

Daily confidence checks were made with each system by observing the outer ranges of the sonar images. A good check consisted of distinguishing contacts or sand waves across the entire range of the side scan trace.

Crosslines

5.8 nautical miles of crosslines were run comprising 17.9% of the 32.4 nautical miles of SSS mainscheme data. Mainscheme data was defined for this survey to be both the 100% and 200% coverages. Crossline to mainscheme comparisons were made in MAPINFO 5.0. No differences greater than 5 percent of the shoalest depth were observed.

Junctions

Survey H11077 does not junction with any contemporary surveys.

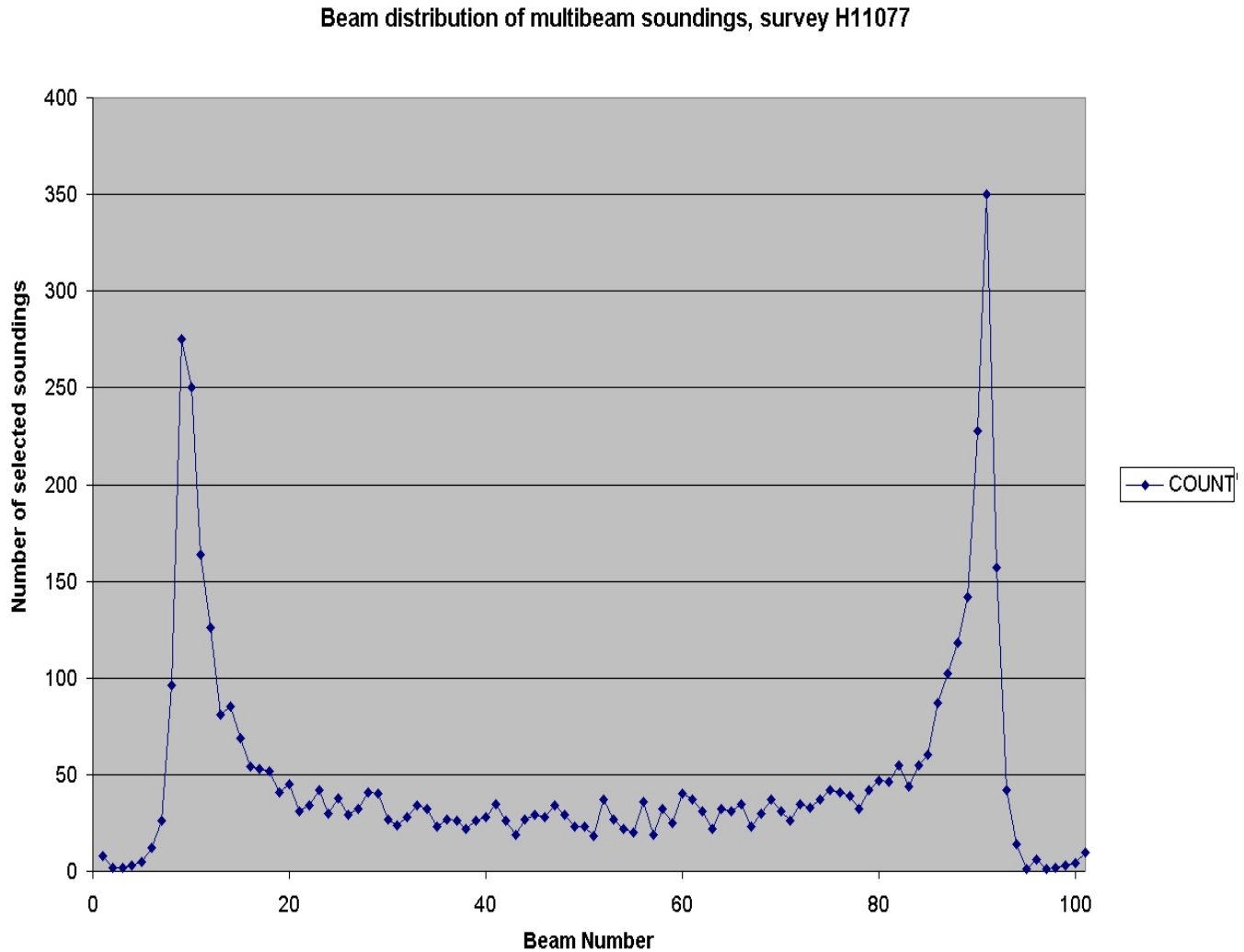
¹

Launch 1005 VBES data were not processed when SWMB data were acquired.

**** Data filed with original field records***

Multibeam quality control

The following histogram depicts the distribution of soundings based upon the beam number. This distribution is typical and reflects a shoal bias in the outer beams and an even distribution among the inner beams.



B.3. CORRECTIONS TO ECHO SOUNDING

All sounding data were corrected as described in the project DAPR *. A table listing all the sound velocity casts is located in Separate III*.

** Data filed with original field records*

C. VERTICAL AND HORIZONTAL CONTROL *See also the Evaluation Report*

Vertical Control

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating tide station at Woods Hole, MA (844-7930) served as control for datum determination.

Tidal zoning for this survey is consistent with the letter instructions. The zones used for this survey are as follows:

STATION	CORRECTOR (min)	RATIO	REFERENCE
SCM31	30	x0.87	844-7930
SCM37	18	x0.90	844-7930
SCM38	18	x0.79	844-7930
SCM39	6	x0.93	844-7930
SCM40	0	x1.00	844-7930
SCM41	-6	x1.15	844-7930
SCM41A	-6	x1.26	844-7930

A Request for Approved Tides was sent to N/OPS1 on September 24, 2001 (Appendix IV). Verified tides for the survey dates and area were posted by N/OPS1 and subsequently applied to all sounding data. *Approved tides and zones were reapplied to survey in CARIS during office processing.*

Horizontal Control

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using a UTM zone of 19.

Sounding positional control was obtained using Global Positioning System (GPS) corrected using U.S. Coast Guard differential GPS reference stations. The primary differential beacon used for this survey was Chatham, MA. No horizontal control stations were established for this survey.

Daily monitoring of the horizontal dilution of precision (HDOP) and the positional dilution of precision (PDOP) were monitored by all vessels. Neither value exceeded 4.00, and adequate satellite coverage was maintained throughout the survey. All positioning equipment was operated in a manner consistent with the manufacturers requirements and as described in

the DAPR *. There were no equipment malfunctions which affected the positional quality of the data.

** Data filed with original field records*

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report*

D.1. CHART COMPARISON

The following charts are affected by this survey:

13218, 38th edition, March 10, 2001, 1:80,000
13229SC, 26th edition, November 9, 1996, 1:40,000
13230, 45th edition, March 17, 2001, 1:40,000
13233, 16th edition, April 14, 2001, 1:40,000
13235, 5th edition, August 31, 2001 **1991**, 1:5,000
13237, 38th edition, March 3, 2001, 1:10,000

General Agreement with Charted soundings

Woods Hole Passage and Great Harbor

Woods Hole is a highly dynamic area. Powerful currents rush through Woods Hole, constantly shifting and altering the bottom topography. Of particular interest is the confluence of Woods Hole Passage and Great Harbor. A shoal area exists where the Broadway branch of Woods Hole Passage empties into Great Harbor. This shoal is the subject of a Danger to Navigation (see **Appendix I**). * Soundings in this area are generally shoaler than charted. In addition to the above noted Danger to Navigation, the following are charting recommendations for Chart 13235 in the vicinity of Woods Hole Passage and Great Harbor: ** Appended to this report. (Dton #3)*

Surveyed Depth (ft)	Charted Depth (ft)	Latitude ¹	Longitude ¹
±5 18	31	41° 31' 02.07" N	70° 40' 32.10" W <i>Concur</i>
11	14	41° 31' 02.78" N	70° 40' 34.21" W <i>Concur</i>
11	14	41° 31' 02.54" N	70° 40' 33.14" W <i>Concur</i>
±8 20	23	41° 31' 03.73" N 64	70° 40' 30.92" W 56

¹ Geographic positions are the surveyed depth.

The northernmost extent of the survey area is a bay west of Woods Hole Oceanographic Institute and NOAA's National Marine Fisheries Service. This bay has numerous moored recreational vessels and small floating structures. The middle of this bay is deep with three wrecks addressed in the item investigations. While not of navigational significance, the area was covered with 100% multibeam. The following charting recommendation is for Chart 13235:

Surveyed Depth (ft)	Charted Depth (ft)	Latitude	Longitude
39 41	46	41° 31' 33.02 18 " N	70° 40' 41.78 80 " W

Little Harbor to Nobska Point

Little Harbor has a controlling depth of 12 ft and is maintained by the U.S. Army Corps of Engineers . 200% Side Scan and 100% Multibeam coverage was acquired in the harbor. No surveyed depths were found to be less than the 12 ft controlling depth. **Concur. See also the Evaluation Report, section D.1., page 3.**

Two dangers were found along the eastern approach to Little Harbor. These items are addressed in the Dangers to Navigation, **Appendix I.*** This approach is generally shoaler than charted. The hydrographer recommends using surveyed soundings in this area. The western approach to Little Harbor is a shoal area between Juniper Point and Great Ledge. This area is generally transited only by small, recreational vessels. Charted depths within the 12-ft curve are generally deeper than charted. **Concur.**

Four Dangers to Navigation were found in the vicinity of Nobska Point. These items are addressed in the Dangers to Navigation, **Appendix I.*** **Concur.**

Nonamassett Shoal and surrounding area

The migration and expansion of Nonamassett Shoal are addressed in the Dangers to Navigation, **Appendix I.*** The southwest corner of the survey area is generally shoaler than charted. The hydrographer recommends using surveyed soundings in this area. **Concur.**

AWOIS Items and Significant Contacts

There were seven AWOIS items addressed by this survey. There were 4 additional contacts found. Each of these features are discussed in this section.

*** Appended to this report**

AWOIS: 8023

Item Description: Wreck of the Fishing Vessel Black Hawk

Source: NM44/65, H8170/54

Item Position: Lat. 41° 30' 44.39" N, Long. 070° 40' 03.10" W

Required Investigation: Information

Item Status: Assigned

Charts Affected: 13235

Search Radius: Unknown

INVESTIGATION

Contact No: N/A

DN: N/A

Least Depth Position Number: N/A

Investigation Used: 200% SSS, 100 % Multibeam

Surveyed Position: N/A

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire survey area. The AWOIS-defined position of the wreck of the F/V Black Hawk is on Great Ledge, a prominent shoal centered in the survey area. Survey work was conducted over all navigable water. The area directly over Great Ledge is not navigable. No evidence of the Black Hawk was found on Great Ledge. Local pilot Captain Christopher Olmsted has no recollection of F/V Black Hawk, but recalls the existence and subsequent removal of the exposed wreck of F/V Bonaker from Great Ledge. F/V Bonaker was removed by AGM, a local marine salvage company. See item investigation of AWOIS 11059.

CHARTING RECOMMENDATION

Recommendations: This item is not currently charted and the hydrographer recommends charting current survey soundings. *Concur.*

AWOIS: 8141

Item Description: 40 ft wooden vessel, position doubtful

Source: H8170/54, NM18/67, H10556/94

Item Position: Lat. 41° 30' 44.40" N, Long. 070° 39' 30.30" W

Required Investigation: None

Item Status: Disproved

Charts Affected: 13235

Search Radius: 150 Meters

INVESTIGATION

Contact No: N/A

DN: 248, 249

Least Depth Position Number: N/A

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: N/A

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the search radius. Though not assigned, this area was fully surveyed. There were fourteen side scan contacts within the AWOIS-specified search radius. This portion of the survey area is exceptionally rocky, accounting for the high number of side scan contacts. None of these side scan contacts required further investigation.

CHARTING RECOMMENDATION

Recommendations: The hydrographer recommends removing the charted wreck . *Concur, w/clarification. Wk is not presently shown on the continuous maintenance raster for chart 13235. Do not chart.*

AWOIS: 8142

Item Description: Wreck, position approximate

Source: H8170/54, LNM46/88(10/16/1988), LNM51/88(12/21/1988)

Item Position: Lat. 41° 31' 20.39" N, Long. 070° 40' 38.10" W

Required Investigation: None

Item Status: Assigned

Charts Affected: 13235

Search Radius: 100 Meters

INVESTIGATION

Contact No: N/A

DN: 248, 249

Least Depth Position Number: N/A

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: N/A

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire search radius. There were seven side scan contacts within the AWOIS specified search radius. All of these contacts were determined to be small rocks and required no further investigation.

CHARTING RECOMMENDATION

Recommendations: The hydrographer recommends removing the charted wreck. *Concur.*

Delete dangerous sunken Wk, PA

AWOIS: 8143

Item Description: Sunken Barge, position approximate

Source: H8170/54, LNM40/85(10/1/85), LNM41/85(10/8/85)

Item Position: Lat. 41° 31' 21.39" N, Long. 070° 40' 40.10" W

Required Investigation: None

Item Status: Assigned

Charts Affected: 13235

Search Radius: 100 Meters

INVESTIGATION

Contact No: N/A

DN: 248, 249

Least Depth Position Number: N/A

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: N/A

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was achieved over the entire search radius. There were ten side scan contacts within the AWOIS specified search radius. All side scan contacts within the search radius were eliminated as candidates for a sunken barge and required no further investigation.

The hydrographer draws a correlation between this AWOIS item and two sunken barges in the same bay. The two barges are located in the deepest part of the basin. Due to the nature of the sloping seafloor and strong current in this area, a number of wrecks are located in the deep point in the basin. The wreck site is approximately 115 meters north of this AWOIS position and is addressed in **Fig. 2 (pg 16)** and item investigations. *Concur.*

CHARTING RECOMMENDATION

Recommendations: The hydrographer recommends removing the charted wreck. *Concur. Delete dangerous sunken Wk, PA*

AWOIS: 8144

Item Description: Wreck (10 ft rep)

Source: H8170/54, LNM55/76(11/24/76), LNM56/76(12/1/76)

Item Position: Lat. 41° 31' 22.89" N, Long. 070° 40' 40.10" W

Required Investigation: None

Item Status: Assigned

Charts Affected: 13235

Search Radius: 100 Meters

INVESTIGATION

Contact No: 249_202_1312_0002

DN: 249, 251

Least Depth Position Number: H11077\05MB\2001-251\054_1426 Ping: 26 Beam: 16

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: Lat. 41° 31' 23.37" N, Long. 070° 40' 40.98" W (from SWMB)

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire search radius. The area was also developed further using SWMB. SSS contact 249_202_1312 was 60 ft NW of the AWOIS location. The SSS contact showed a debris field, 10 m by 5 m, indicative of a small wreck. SWMB investigation corroborated a small wreck at this location and provided a least depth of 17.01 m (56 ft) with surrounding depths of 18 m (59 ft) using verified tides.

CHARTING RECOMMENDATION

Recommendations: The hydrographer recommends removing the charted wreck *(10ft rep)* at Lat. 41° 31' 22.89" N, Long. 070° 40' 40.10" W and charting a non-dangerous wreck at location Lat. 41° 31' 23.37" N, Long. 070° 40' 40.98" W. *Concur in part.*

Chart a dangerous 56 Wk. Delete dangerous sunken Wk (10ft rep).

AWOIS: 11059

Item Description: 61 ft fishing vessel, Great Ledge

Source: LNM5/98

Item Position: Lat. 41° 30' 30.00" N, Long. 070° 39' 42.00" W

Required Investigation: None

Item Status: Assigned

Charts Affected: 13235

Search Radius: 250 Meters

INVESTIGATION

Contact No: N/A

DN: N/A

Least Depth Position Number: N/A

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: N/A

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire search radius. There were seven side scan contacts within the AWOIS specified search radius. All of these contacts were determined to be small rocks and required no further investigation. The AWOIS description describes this item to be an exposed wreck in the location of Great Ledge (which is outside of the search radius). Local pilot Captain Christopher Olmsted recalls the existence and subsequent removal of the exposed wreck of F/V Bonaker from Great Ledge. F/V Bonaker was removed in 1999 by AGM, a local marine salvage company working as a contractor for U.S. Army Corps of Engineers.

CHARTING RECOMMENDATION

Recommendations: The hydrographer recommends removing the charted wreck. *Concur in part. The dangerous sunken Wk, PA is not shown on the continuous maintenance raster for chart 13235. Do not Chart.*

AWOIS: 11061

Item Description: Wreck, position approximate

Source: Unknown

Item Position: Lat. 41° 31' 24.00" N, Long. 070° 40' 32.00" W

Required Investigation: Full

Item Status: Assigned

Charts Affected: 13235

Search Radius: 100 Meters

INVESTIGATION

Contact No: N/A

DN: N/A

Least Depth Position Number: N/A

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: N/A

Position Determined By: Differential GPS

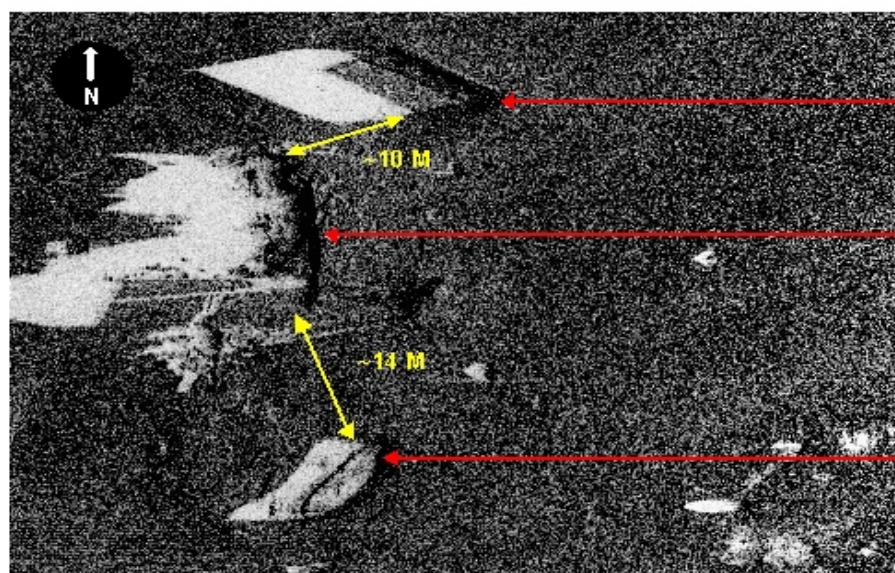
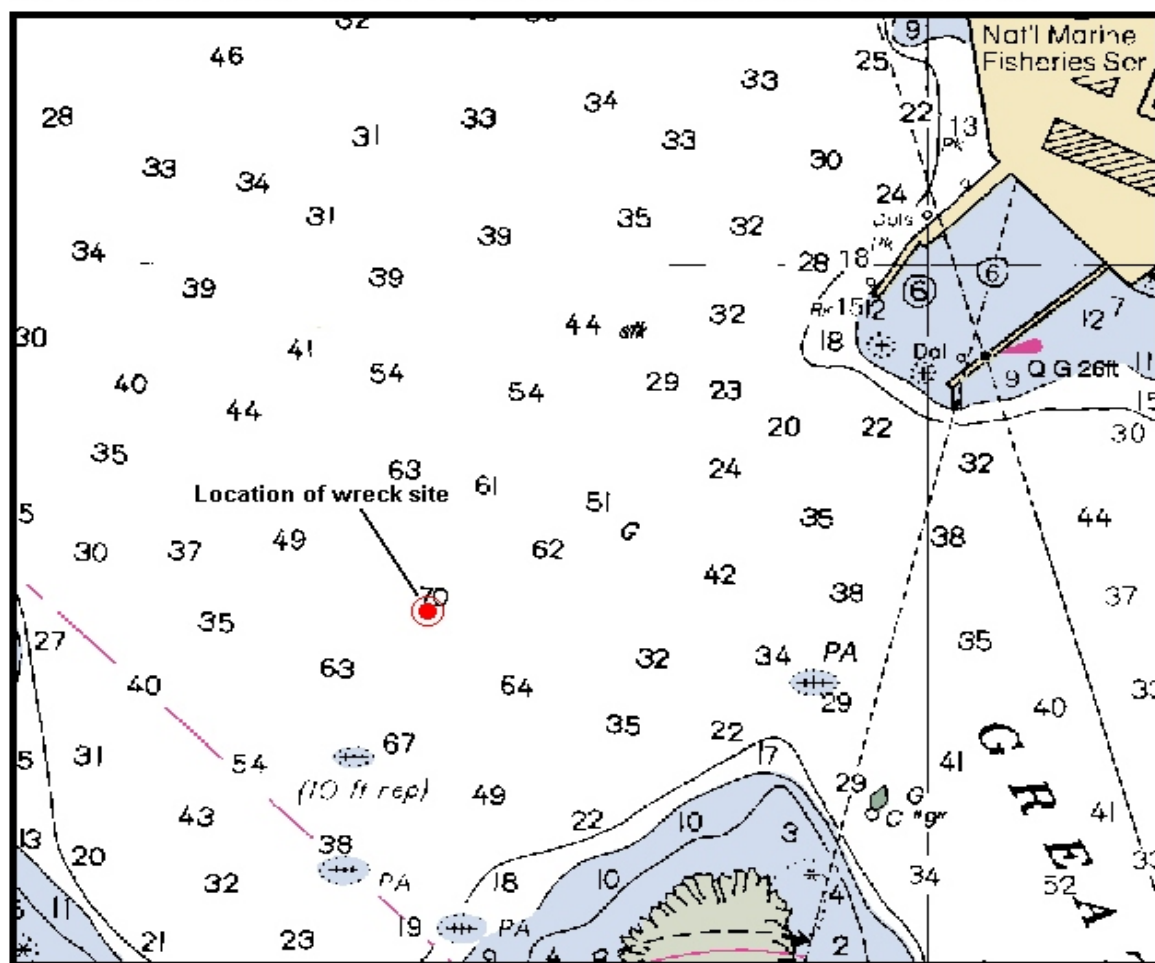
Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was achieved over the entire search radius. There were six side scan contacts within the AWOIS specified search radius. All of these contacts were determined to be small rocks and required no further investigation.

CHARTING RECOMMENDATION

Recommendations: The hydrographer recommends removing the charted wreck. *Concur. Delete dangerous sunken Wk, PA.*

SSS image of wreck site.

See item investigations for Barge, Crane Barge, F/V Jane & Flora, and Lifeboat



Barge
Lat 41° 31' 25.36" N
Lon 70° 40' 38.81" W

Crane Barge
(beneath F/V Jane & Flora)
Lat 41° 31' 24.77" N
Lon 070° 40' 39.04" W

F/V Jane & Flora
(atop Crane Barge)
Lat 41° 31' 24.77" N
Lon 070° 40' 39.04" W

Lifeboat from R/V Chain
Lat 41° 31' 23.98" N
Lon 70° 40' 38.78" W

Fig. 2

Item: Crane Barge

Item Description: Crane barge resting beneath F/V Jane & Flora

Source: SSS Contact

Item Position: Lat: 41 31 24.77 N Lon: 70 40 39.04 W (from SSS position)

Required Investigation: None

Item Status: N/A

Charts Affected: 13235

INVESTIGATION

Contact No: H11077_200/14HS/2001-249/204_1304_0001

DN: 249, 252

Least Depth Position Number: N/A see item investigation F/V Jane & Flora

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: N/A

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire survey area. A NOAA Dive team investigated the site on DN 252. A second NOAA dive team from NOAA's National Marine Fisheries Service conducted dive operations to further identify the various wrecks colocated in this area. The results of this investigation revealed the contact to be the remains of a crane barge. It rests on its side beneath the remains of the F/V Jane & Flora. See **Fig. 2 (pg 16)** and **Appendix V *** for the results of this dive investigation.

** Data filed with original field records*

CHARTING RECOMMENDATION

Recommendations: See charting recommendation for F/V Jane & Flora *Concur, see page 19.*

Item: Barge

Item Description: Barge upright north of F/V Jane & Flora and Crane Barge

Source: SSS Contact

Item Position: Lat: 41° 31' 25.36" N Lon: 70° 40' 38.81" N (from SSS position)
Lat: 41° 31' 25.701" N Lon: 70° 40' 39.10" N (from SWMB LD position)

Required Investigation: None

Item Status:

Charts Affected: 13235

INVESTIGATION

Contact No: /H11077_200/14HS/2001-249/204_1304_0001

DN: 249, 252

Least Depth Position Number: H11077\05MB\2001-251\018_1429 Ping:69 Beam:65
18.37 M (60 ft)

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: Lat: 41° 31' 25.701" N Lon: 70° 40' 39.10" N (from SWMB LD position)

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire survey area. NOAA Dive team investigated the site on DN 252. A second NOAA dive team from NOAA's National Marine Fisheries Service conducted dive operations to further identify the various wrecks colocated in this area. The results of this investigation revealed this contact to be the remains of a barge with SWMB least depth of 18.37 M (60.3 ft) corrected with verified tides. It rests north of F/V Jane & Flora and Crane Barge. See **Fig. 2 (pg 16)** and **Appendix V *** for the results of this dive investigation.

*** Data filed with original field records**

CHARTING RECOMMENDATION

Recommendations: See charting recommendation for F/V Jane & Flora **Do not concur.**
Chart a dangerous 60 Wk.

Item: F/V Jane & Flora

Item Description: Wooden fishing vessel lying on top of crane barge.

Source: SSS contact

Item Position: Lat: 41° 31' 24.77" N Lon: 70° 40' 39.04" W (from SSS position)
Lat: 41° 31' 24.786" N Lon: 70° 40' 38.95" W (from SWMB LD)

Required Investigation: None

Item Status:

Charts Affected: 13235

INVESTIGATION

Contact No: /H11077_200/14HS/2001-249/204_1304_0001

DN: 249, 251, 252

Least Depth Position Number: H11077\05MB\2001-251\054_1426 Ping:274 Beam:85
15.45 M (50 ft)

Investigation Used: 200% SSS, 100% Multibeam

Surveyed Position: Lat: 41° 31' 24.786" N Lon: 70° 40' 38.95" W (from SWMB LD)

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire survey area.. A least depth of 15.45 M (50 ft), corrected with verified tides, was obtained using SWMB. A NOAA Dive team investigated the site on DN 252. A second NOAA dive team from NOAA's National Marine Fisheries Service conducted dive operations to further identify the various wrecks colocated in this area. The results of this investigation revealed the wooden vessel to be the remains of the F/V Jane & Flora. A least depth of 15.45 M (50.7 ft) was obtained using SWMB corrected with verified tides. It rests atop the remains of a crane barge. See **Fig. 2 (pg 16)** and **Appendix V *** for the results of this dive investigation.

** Data filed with original field records*

CHARTING RECOMMENDATION

Recommendations: The hydrographer recommends charting a wreck with a least depth of 50 ft (15.45 M) at Lat: 41° 31' 24.786" N Lon: 70° 40' 38.95" W . **Concur.**

Chart a dangerous 50 Wk

Item: Life Boat

Item Description: Life boat from R/V Chain. S of F/V Jane & Flora and Crane Barge

Source: SSS Contact

Item Position: Lat: 41° 31' 23.98" N Lon: 70° 40' 38.78" W (from SSS position)
Lat: 41° 31' 24.13~~09~~⁰⁹" N Lon: 70° 40' 38.89~~85~~⁸⁵" N (from SWMB LD position)

Required Investigation: None

Item Status:

Charts Affected: 13235

INVESTIGATION

Contact No: /H11077_200/14HS/2001-249/204_1304_0001

DN: 248, 249, 252

Least Depth Position Number: H11077\05MB\2001-248\329_1748 Ping:370 Beam:10
20.38 M (67 ft) **19.42 M (63 ft)** **328_1745** **785** **99**

Investigation Used: 200% SSS, 100% SWMB

Surveyed Position: Lat: 41° 31' 24.13~~09~~⁰⁹" N Lon: 70° 40' 38.89~~85~~⁸⁵" N (from SWMB LD position)

Position Determined By: Differential GPS

Investigation Summary: Two hundred percent side scan sonar coverage and one hundred percent SWMB coverage was acquired over the entire survey area. NOAA Dive team investigated the site on DN 252. A second NOAA dive team from NOAA's National Marine Fisheries Service conducted dive operations to further identify the various wrecks colocated in this area. The results of this investigation revealed this contact to be the remains of a life boat from R/V Chain. A least depth of 20.38 **19.42 M (63.7 ft)** was obtained using SWMB corrected with ~~verified~~ **approved** tides. It rests south of F/V Jane & Flora and Crane Barge. See **Fig. 2 (pg 16)** and **Appendix V*** for the results of this dive investigation

*** Data filed with original field records**

CHARTING RECOMMENDATION

Recommendations: See charting recommendation for F/V Jane & Flora **Do not concur.**
Chart a dangerous 63 Wk.

Dangers to Navigation

Twenty four Dangers to Navigation were submitted for this survey. For a copy of this report, see **Appendix I. Appended to this report.**

** Soundings below were not considered DtoNs during office processing because of equal or shoaler depths in the immediate vicinity.*

DTON #	LATITUDE	LONGITUDE	DEPTH (FT)	FEATURE P/V/D/L/P/B	ITEM
1	41°31'25.34" N	70°40'15.11" W	6	/H11077/05MB/2001-248/ 337_2136/989/13	Sounding Concur
2	41°31'12.22" N	70°40'27.83" W	27	/H11077/05MB/2001-252/ 849_1700/32/67	Sounding Concur
3	41°31'03.94" N	70°40'32.41" W	12	/H11077/05MB/2001-249/ 395_2019/668/87	Sounding Concur
4*	41°30'59.22" N	70°40'22.40" W	36	/H11077/05MB/2001-248/ 312_1623/522/12	Sounding
5	41°30'59.54" N	70°40'11.27" W	16	/H11077/05MB/2001-249/ 383_1704/50/9	Sounding Concur
6	41°30'42.44" N	70°40'22.68" W	11	/H11077/05MB/2001-252/ 817_1241/226/90	Sounding Concur
7	41°30'34.53" N	70°40'25.78" W	11	/H11077/05MB/2001-249/ 435_1840/666/8	Sounding Concur
8	41°30'32.72" N	70°40'25.03" W	16	/H11077/05MB/2001-252/ 808_1255/165/23	Sounding Concur
9*	41°30'31.57" N	70°40'23.80" W	19	/H11077/05MB/2001-249/ 434_1844/279/72	Sounding
10*	41°30'30.31" N	70°40'24.04" W	27	/H11077/05MB/2001-249/ 434_1844/179/14	Sounding
11*	41°30'31.11" N	70°40'16.37" W	22	/H11077/05MB/2001-249/ 425_1917/1774/66	Sounding
12	41°30'44.31" N	70°40'13.20" W	18	/H11077/05MB/2001-248/ 302_1438/865/15	Sounding Concur
13*	41°30'42.48" N	70°40'12.36" W	22	/H11077/05MB/2001-248/ 301_1406/1044/82	Sounding
14	41°30'40.11" N	70°40'07.68" W	18	/H11077/05MB/2001-248/ 308_1340/1451/40	Sounding Concur

DTON #	LATITUDE	LONGITUDE	DEPTH (FT)	FEATURE P/V/D/L/P/B	ITEM
15	41°30'33.71" N	70°40'00.87" W	17	/H11077/05MB/2001-252/ 889_1328/668/34	Sounding <i>Concur</i>
16	41°30'37.07" N	70°39'57.96" W	15	/H11077/05MB/2001-250/ 611_1402/302/86	Sounding <i>Concur</i>
17	41°30'43.51" N	70°39'26.53" W	20	/H11077/05MB/2001-250/ 635_1509/183/88	Sounding <i>Concur</i>
18	41°30'45.47" N	70°39'31.27" W	16	/H11077/05MB/2001-248/ 355_1928/1896/14	Sounding <i>Concur</i>
19	41°30'47.96" N	70°39'24.00" W	10	/H11077/05MB/2001-250/ 604_1810/936/35	Sounding <i>Concur</i>
20	41°30'49.02" N	70°39'24.95" W	12	/H11077/05MB/2001-250/ 605_1812/183/19	Sounding <i>Concur</i>
21	41°30'48.37" N	70°39'31.31" W	10	/H11077/05MB/2001-251/ 046_1721/144/72	Sounding <i>Rock</i>
22	41°30'47.75" N	70°39'32.96" W	16	/H11077/05MB/2001-248/ 361_1939/1599/31	Sounding <i>Concur</i>
23	41°30'49.97" N	70°39'42.22" W	15	/H11077/05MB/2001-251/ 048_1726/398/56	Sounding <i>Concur</i>
24	41°30'51.21" N	70°39'41.80" W	15	/H11077/05MB/2001-251/ 048_1726/506/26	Sounding <i>Concur</i>

D.2. ADDITIONAL RESULTS

Aids to Navigation (ATON's) and Other Detached Positions

All ATONs were DP'd during this survey and their DP position checked against their charted and published positions. All ATONs were found to be on station and serving their intended purpose. *Concur*. All DP's and their associated digital photos have been inserted into the PYDRO Preliminary Smooth Sheet for this survey. Please see the PYDRO data on DN 250 to review these data.

There were no requirements for shoreline verification on this survey.

E. APPROVAL SHEET

S-B904-WH
South Coast of Massachusetts

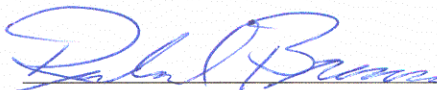
Woods Hole
Survey Registry No. H11077

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, this Descriptive Report, and all accompanying records and data are approved.

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Submitted: 

LTJG Jason Seifert, NOAA
Junior Officer



LT Richard T. Brennan, NOAA
Field Operations Officer

Approved and Forwarded: 

CDR Steven R. Barnum, NOAA
Commanding Officer

REPORT OF DANGERS TO NAVIGATION

Survey Registry Number:

H11077

State:

Massachusetts

Locality:

South Coast of Massachusetts

Sub-Locality:

Woods Hole

Project Number:

S-B904-WH

Survey Date(s):

September 5 - September 9, 2001

Soundings are reduced to Mean Lower Low Water (MLLW) using Verified Water Levels. Horizontal datum is NAD 83.

Chart(s) Affected: **13235**, 5th edition, August 31, 2001, 1:5,000
13218, 38th edition, March 10, 2001, 1:80,000
13237, 38th edition, March 3, 2001, 1:80,000
13233, 16th edition, April 14, 2001, 1:40,000
13230, 45th edition, March 17, 2001, 1:40,000
13229SC, 26th edition, November 9, 1996, 1:40,000

DANGERS TO NAVIGATION

Twenty four dangers to navigation (see Attachments) were discovered during mainscheme hydrography on Sheet H11077, Woods Hole.

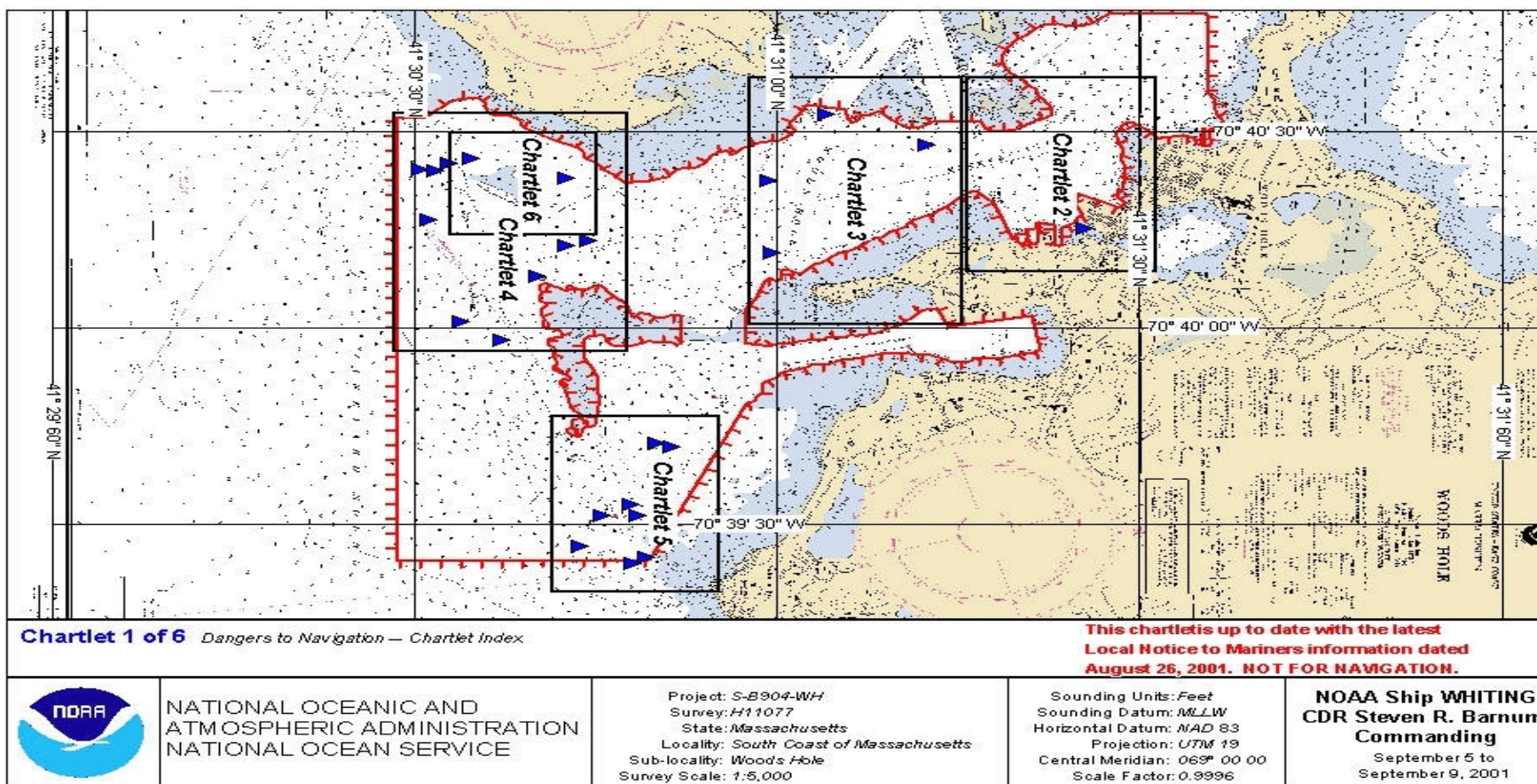
Particular attention should be paid to the DtoN's along the entrance range to Woods Hole (DtoN 12, 13), as this approach is used by deep-draft research vessels. Attention should also be paid to the DtoN's along the approach to the Coast Guard Station in Little Harbor (DtoN 23, 24) and Eel Pond (DtoN 1), which is a busy anchorage for recreational craft..

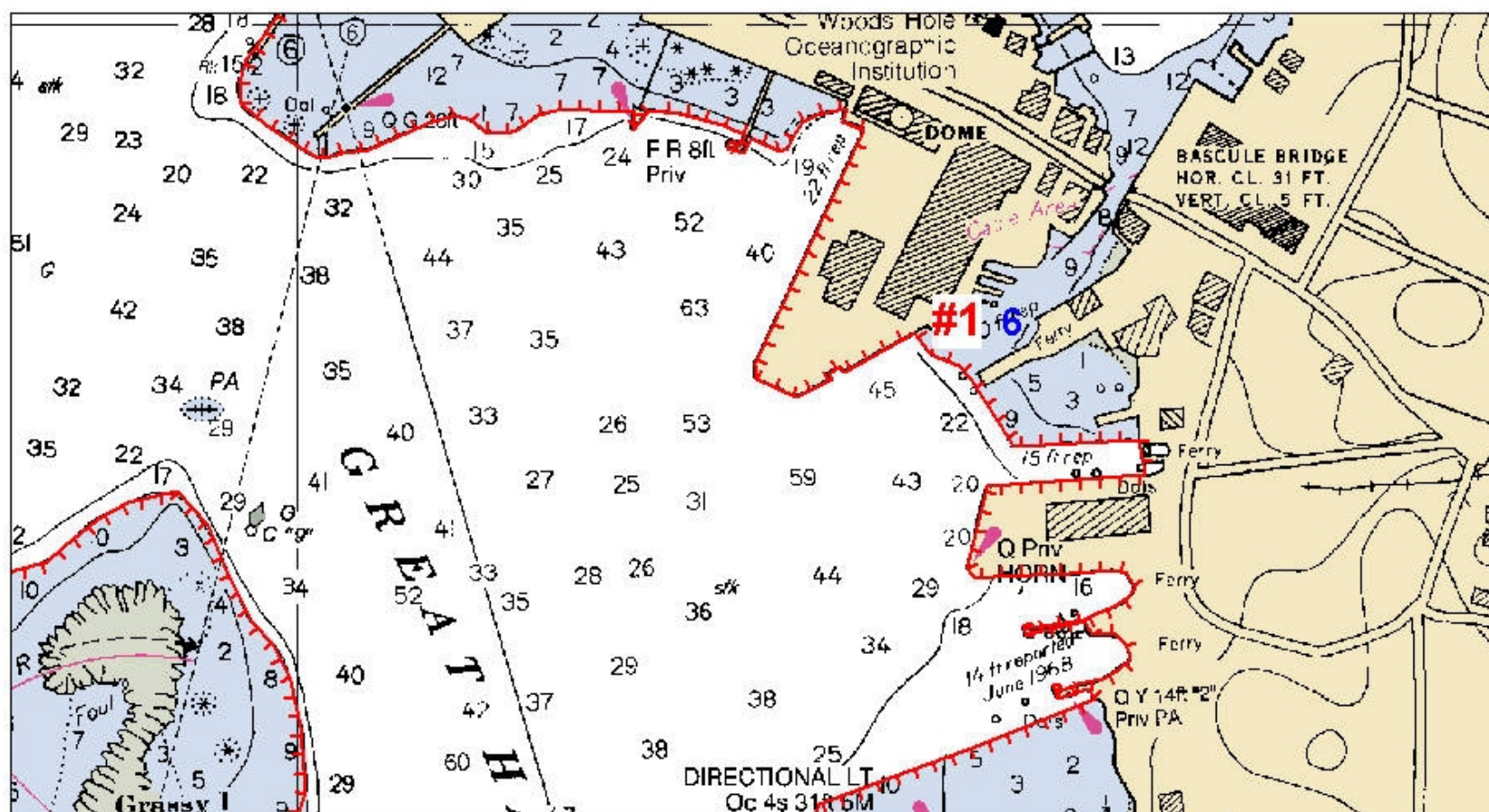
Chartlet 6 depicts the expansion and migration of Nonamesset Shoal.

DTON #	LATITUDE	LONGITUDE	DEPTH (FT)	ITEM
1	41°31'25.34" N	70°40'15.11" W	6	Sounding
2	41°31'12.22" N	70°40'27.83" W	27	Sounding
3	41°31'03.94" N	70°40'32.41" W	12	Sounding
4	41°30'59.22" N	70°40'22.40" W	36	Sounding
5	41°30'59.54" N	70°40'11.27" W	16	Sounding
6	41°30'42.44" N	70°40'22.68" W	11	Sounding

DTON #	LATITUDE	LONGITUDE	DEPTH (FT)	ITEM
7	41°30'34.53" N	70°40'25.78" W	11	Sounding
8	41°30'32.72" N	70°40'25.03" W	16	Sounding
9	41°30'31.57" N	70°40'23.80" W	19	Sounding
10	41°30'30.31" N	70°40'24.04" W	27	Sounding
11	41°30'31.11" N	70°40'16.37" W	22	Sounding
12	41°30'44.31" N	70°40'13.20" W	18	Sounding
13	41°30'42.48" N	70°40'12.36" W	22	Sounding
14	41°30'40.11" N	70°40'07.68" W	18	Sounding
15	41°30'33.71" N	70°40'00.87" W	17	Sounding
16	41°30'37.07" N	70°39'57.96" W	15	Sounding
17	41°30'43.51" N	70°39'26.53" W	20	Sounding
18	41°30'45.47" N	70°39'31.27" W	16	Sounding
19	41°30'47.96" N	70°39'24.00" W	10	Sounding
20	41°30'49.02" N	70°39'24.95" W	12	Sounding
21	41°30'48.37" N	70°39'31.31" W	10	Sounding
22	41°30'47.75" N	70°39'32.96" W	16	Sounding
23	41°30'49.97" N	70°39'42.22" W	15	Sounding
24	41°30'51.21" N	70°39'41.80" W	15	Sounding

Questions concerning this report should be directed to the Chief, Atlantic Hydrographic Branch at (757)441-6746.





Chartlet 2 of 6

Dangers to Navigation

This chartlet is up to date with the latest
Local Notice to Mariners information dated
August 26, 2001. NOT FOR NAVIGATION.

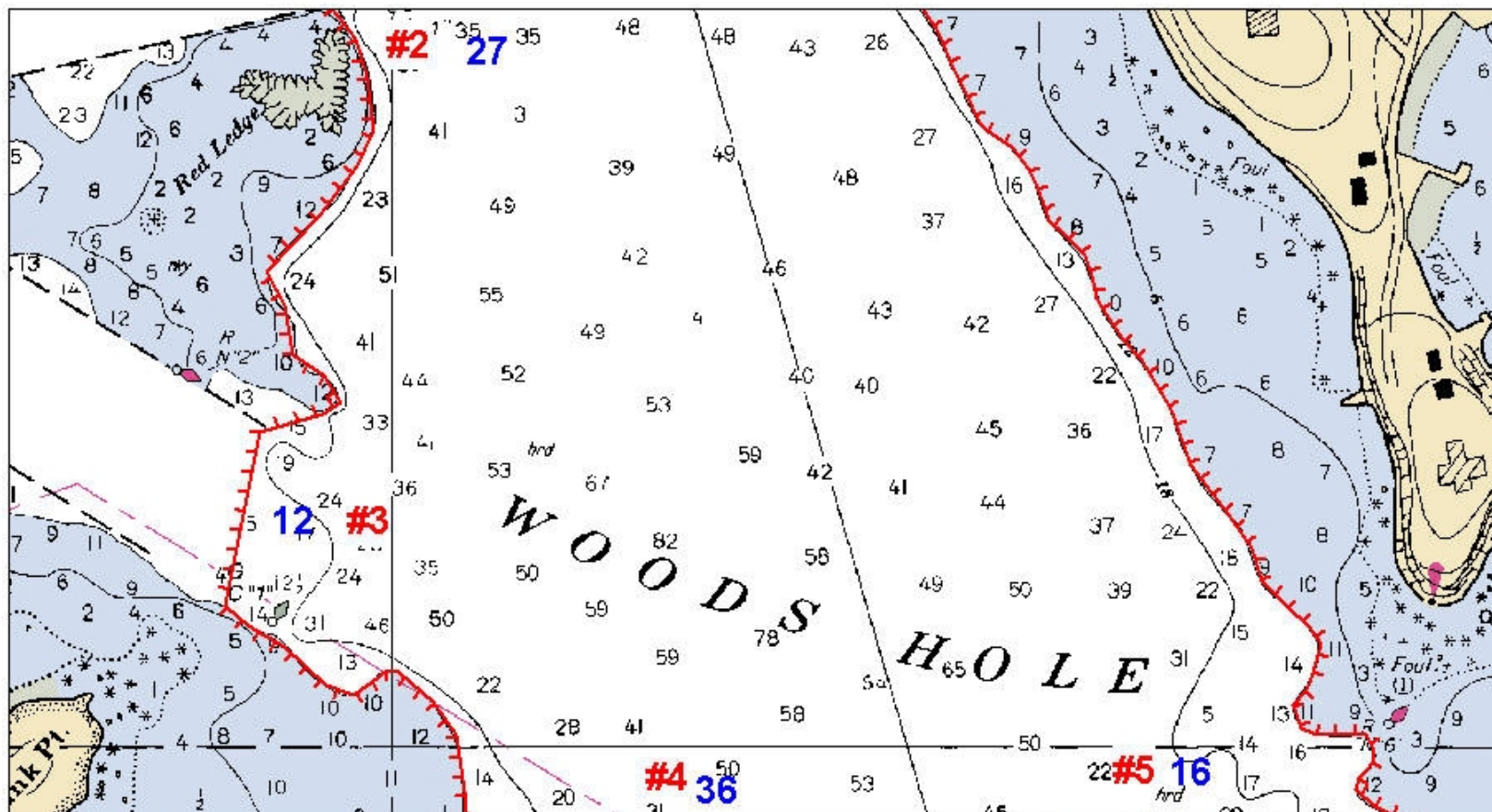


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: S-B904-WH
Survey: H11077
State: Massachusetts
Locality: South Coast of Massachusetts
Sub-locality: Woods Hole
Survey Scale: 1:5,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: UTM 19
Central Meridian: 069° 00 00
Scale Factor: 0.9996

NOAA Ship WHITING
CDR Steven R. Barnum
Commanding
September 5 to
September 9, 2001



Chartlet 3 of 6 Dangers to Navigation

This chartlet is up to date with the latest
Local Notice to Mariners information dated
August 26, 2001. NOT FOR NAVIGATION.

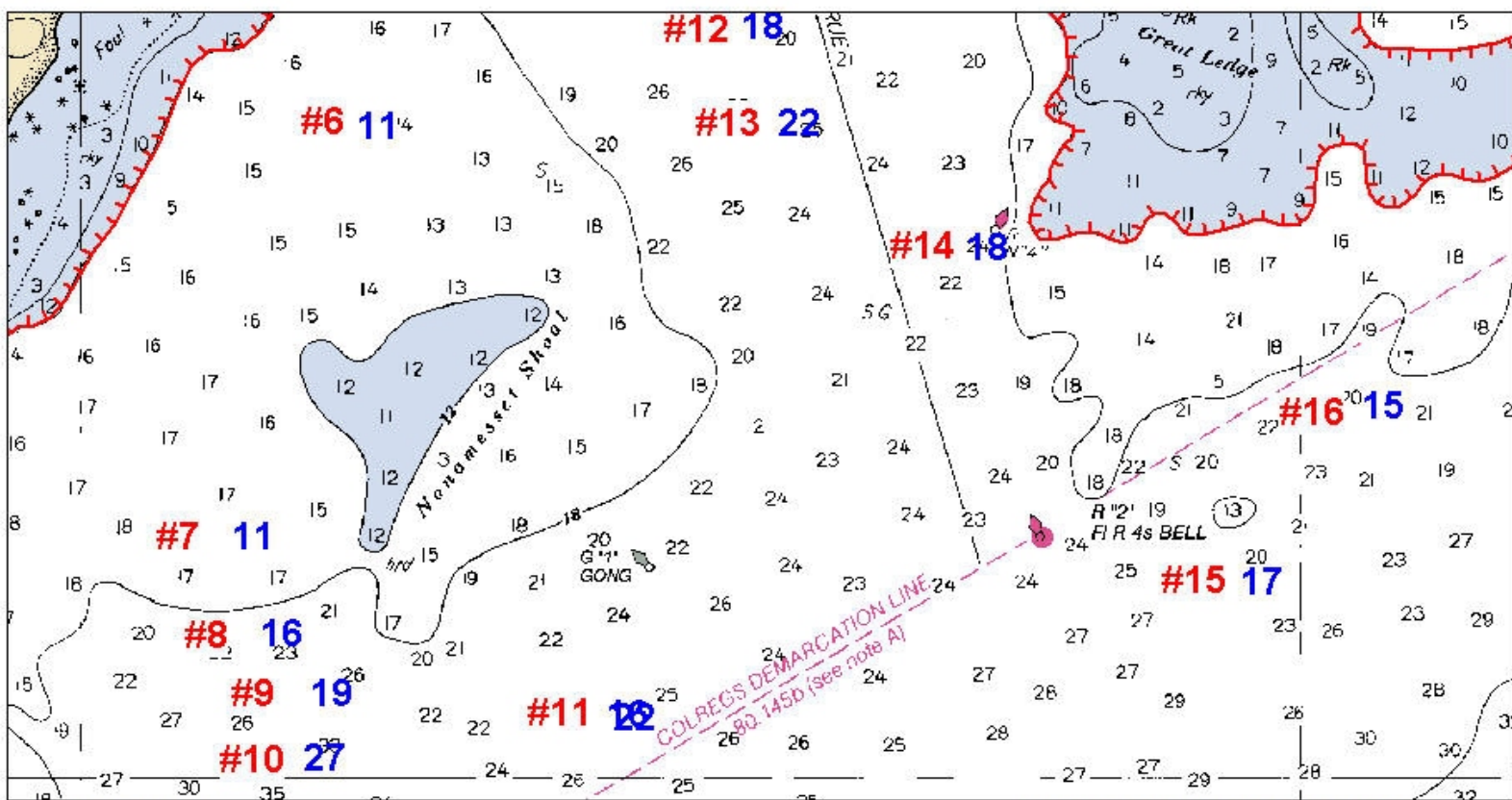


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: S-B904-WH
Survey: H11077
State: Massachusetts
Locality: South Coast of Massachusetts
Sub-locality: Woods Hole
Survey Scale: 1:5,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: UTM 19
Central Meridian: 069° 00 00
Scale Factor: 0.9996

NOAA Ship WHITING
CDR Steven R. Barnum
Commanding
September 5 to
September 9, 2001



Chartlet 4 of 6 *Dangers to Navigation*

This chartlet is up to date with the latest
Local Notice to Mariners information dated
August 26, 2001. NOT FOR NAVIGATION.

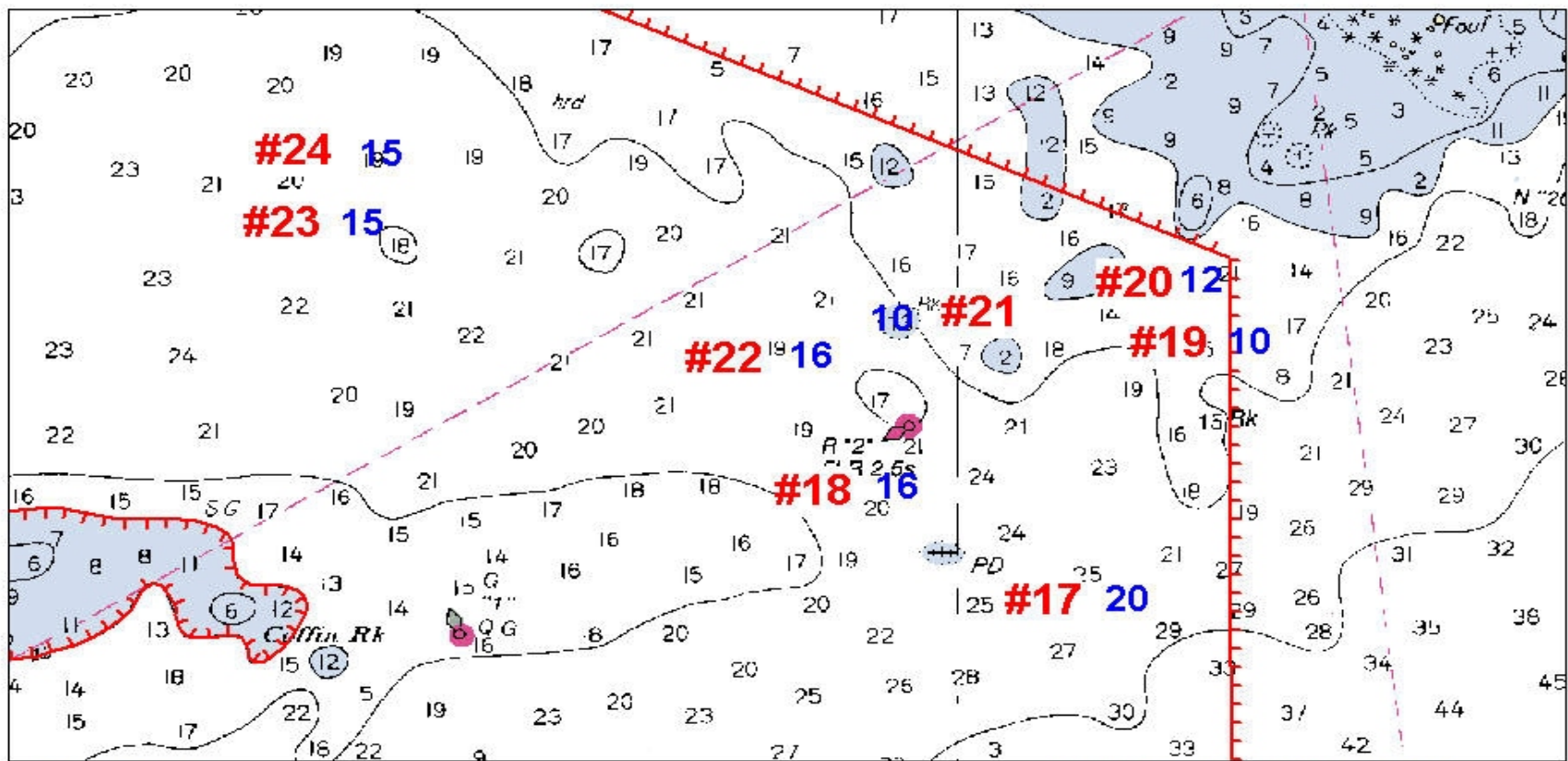


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: S-B904-WH
Survey: H11077
State: Massachusetts
Locality: South Coast of Massachusetts
Sub-locality: Woods Hole
Survey Scale: 1:5,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: UTM 19
Central Meridian: 069° 00 00
Scale Factor: 0.9996

NOAA Ship WHITING
CDR Steven R. Barnum
Commanding
September 5 to
September 9, 2001

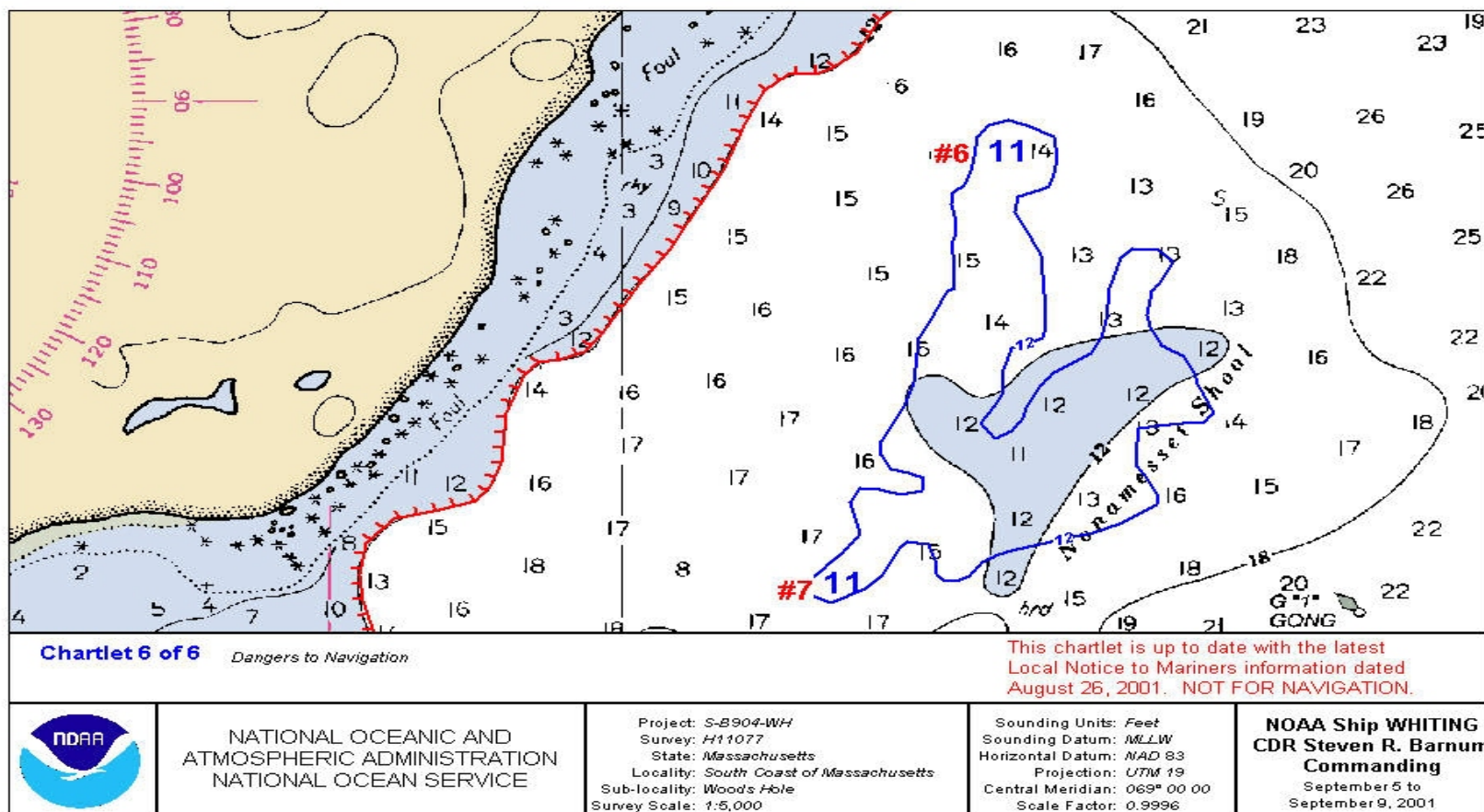


NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: S-B904-WH
Survey: H11077
State: Massachusetts
Locality: South Coast of Massachusetts
Sub-locality: Wood's Hole
Survey Scale: 1:5,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: UTM 19
Central Meridian: 069° 00 00
Scale Factor: 0.9996

NOAA Ship WHITING
CDR Steven R. Barnum
Commanding
September 5 to
September 9, 2001





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: May 6, 2002

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B904-WH-2001
HYDROGRAPHIC SHEET: H11077

LOCALITY: Woods Hole, MA
TIME PERIOD: September 5-9, 2001

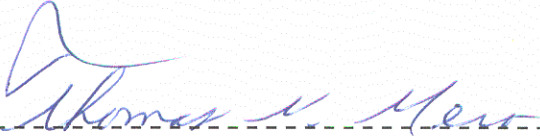
TIDE STATION USED: 844-7930 Woods Hole, MA
Lat. 41° 31.3'N Lon. 70° 40.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.60 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SCM88, SCM89, SCM90, SCM91, SCM92,
SCM93, SCM95, SCM96

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units
(meters), relative to MLLW and on Greenwich Mean Time.

 5/7/02
CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



Printed on Recycled Paper



**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H11077 (2001)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System
MicroStation J, version 7.1
I/RAS B, version 7.01
NADCON, version 2.10
MapInfo, version 6.5
CARIS HIPS/SIPS 2000
PYDRO, version 2.5.4

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP plotter.

Junctions

There are no junctional surveys to the north, south, east, or to the west. Present survey depths are in harmony with the charted hydrography to the north, south, east and to the west.

C. VERTICAL AND HORIZONTAL CONTROL

Horizontal Control

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27, move the projection lines 0.392 seconds (12.106 meters or 2.42 mm at the scale of the survey) north in latitude, and 1.892 seconds (43.873 meters or 8.77 mm at the scale of the survey) east in longitude.

D. RESULTS AND RECOMMENDATIONS

D.1. COMPARISON WITH CHARTS 13235 (5th Edition, AUG. 31/91)

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section D.1. of the Descriptive Report. Continual maintenance raster updated to November 30, 2002 was used for chart comparison during office processing. Attention is directed to the following:

a. The charted notation *14 ft reported June 1968*, in the vicinity of Latitude 41°31'19.79"N, Longitude 70°40'15.00"W, was investigated by the present survey. It is recommended that the notation *14 ft reported June 1968* be deleted and the present survey soundings be charted in the common area.

b. The following charted features have been verified by the present survey:

<u>Feature</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>	<u>Charting Recommendation</u>
6 Rk (Coffin Rk)	41°30'43.36"	70°39'45.00"	revise to 5 Rk
11 Rk	41°30'37.86"	70°39'46.20"	revise to 13 Rk
13 Rk	41°30'46.60"	70°39'24.74"	retain
15 Rk	41°31'29.38"	70°40'31.22"	revise to 16 Rk
Subm Rk	41°31'28.98"	70°40'31.13"	revise to 16 Rk
18 Rk	41°31'28.27"	70°40'30.52"	revise to 17 Rk
17 Rk	41°31'34.72"	70°40'31.11"	revise to 18 Rk

c. An uncharted dolphin was located by the hydrographer in Latitude 41°31'12.95"N, Longitude 70°40'02.25"W. It is recommended that a dolphin be charted as shown on the present survey.

d. An uncharted rock with a depth of 15 feet was located by the present survey in Latitude 41°30'54.60"N, Longitude 70°39'52.18"W. It is recommended that a dangerous 15 Rock be charted as shown on the present survey.

e. An uncharted rock with a depth of 5 feet was located by the present survey in Latitude 41°30'41.67"N, Longitude 70°39'58.41"W. It is recommended that a 5 Rock be charted as shown on the present survey.

The present survey is adequate to supersede the charted hydrography within the common area.

Dangers to Navigation

One Danger to Navigation report was submitted to the Marine Chart Division, N/CS3x1, Silver Spring, Maryland. A copy of this report is appended to the Descriptive Report. The following should be noted:

The dangers to navigation submitted by the hydrographer are presently shown on the continual maintenance raster updated to Nov. 30/02. It is recommended that these features and soundings be retained as charted.

Danger to navigation items #4, #9, #10, #11, and #13 were not considered dangers to navigation during office processing because of equal or shoaler depths in the immediate vicinity. It is recommended that these soundings not be charted. It is recommended that present survey soundings be charted as shown on the present survey.

Controlling Depths

No conflict exists with the charted controlling depth in the entrance channel and turning basin of Little Harbor and present survey soundings throughout the common area. The present survey shows depths of 15 and 16 feet. It is recommended that the controlling depths notes be revised to reflect present survey depths unless other information indicates otherwise.

Comparison with Prior Surveys

A comparison with prior surveys was not done during office processing in accordance with section 4. of the memorandum titled *Changes to Hydrographic Survey Processing*, dated May 24, 1995.

Adequacy of Survey

This is an adequate hydrographic/side scan sonar/multibeam survey. No additional field work is recommended.

Miscellaneous

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. The continuous maintenance raster updated to November 30, 2002 was used for the following NOS Chart for compilation of the present survey: 13235 (5th Edition, AUG. 31/91)

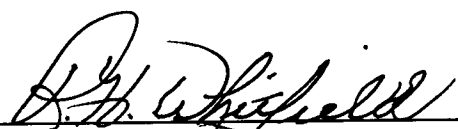
Robert Snow

Robert Snow

Cartographic Technician
Verification of Field Data
Evaluation and Analysis


APPROVAL SHEET
H11061

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.


Richard H. Whitfield
Cartographer,
Atlantic Hydrographic Branch

Date: 6/11/03

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Approved: 
Emily B. Christman
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: 6/11/03

AWOIS/SURFV, 7/14/03. SS!

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H11077

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED